

REMARKS

Claims 2 to 15 and 17 to 21 are pending in the application; claim 1 and 16 are canceled.

Claim Objections

The claims 1-19 have been revised; new claims 20 and 21 are submitted to replace the claims 1 and 16. Reference characters have been removed. Proper interconnection of the elements is believed to be provided.

Rejection under 35 U.S.C. 103

Claims 1-4 and 7-19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Suwa* (US 6,033,301).

The cited prior art reference discloses a device for exhaust gas treatment where the fresh supply air is guided via filters 6 of the filter fan units 7 (Fig. 4b) or a dust removal filter 3 (Fig. 4a) into the clean room. The air in the clean room is also recirculated through the floor and filtered through absorption filters 6. The cleanroom 1 contains processing devices 2 and the air supplied to the clean room passes past them as is conventional in clean room technology. There are no supply lines connecting the incoming air flow directly to the processing devices and there are also no exhaust lines that are connected to the processing devices for removing exhaust air. The improvement proposed in the cited patent over the prior art designs of Figs. 4a, 4b deals with facilitating access to the filter fan units or filters for inspection. The general configuration of the clean room is however not changed.

The present invention differs in its principal configuration from this prior art device in that, according to claim 20, a first supply line 5 is connected to the working room 3 and a second supply line 5' is connected **directly** to the processing device 2. Moreover, the exhaust air of the processing device 2 flows into a first exhaust air line 10 connected to the processing device 2. This first exhaust air line 10 has at least a first filter 11 located therein. The exhaust air that has been filtered by the at least one filter 11 is returned via the exhaust air line 10 to the air supply line 5, either directly (Fig. 1) or indirectly by connecting the exhaust air line 10 to the return line 6 of the work room and guiding the exhaust air of the processing device through the recirculating device 7.

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Such a configuration is not shown in the cited prior art reference where the air supply is fed into the clean room across the ceiling and is removed through the floor, as is well known in the art of clean room technology.

Also, the processing devices (2) according to the prior art do not have a second exhaust line via which the exhaust air of the processing device (2) is exhausted through an exhaust air device (9). Air supply lines and exhaust air lines that are **directly** connected to the processing device are not disclosed in the cited prior art reference. Therefore, this prior art reference cannot disclose the measures of providing within such exhaust air line of the processing device a filter for filtering specifically the exhaust air of the processing device. Moreover, because such exhaust air lines are missing, it is also not possible that **filtered exhaust air of the processing device** is returned to the air supply line.

The examiner's position that it would be obvious to connect air supply lines and exhaust lines to the processing devices for selective removal of hazardous gases is clearly based on hindsight in view of the solution presented by the present invention. Even though the prior art teaches to divide a clean room by walls 8 and to provide separate areas according to Fig. 3 (col. 5, line 61, to col. 6, line 18), these areas are still operated according to the design of a basic clean room, i.e., several filter fan units cover the ceiling, the air is blown in through the ceiling, and the air is removed through the floor. The recirculated air of **all separated rooms A, B, C** is returned to the air supply and filtration is provided by filter units of a chamber 12 covering the separate room B. This chamber has filters 6 at the air intake. This means that the entire air that is being circulated within the clean room A, B, C is contaminated and only the separated space B is protected by filtering the incoming air. This arrangement cannot suggest that an exhaust air line be connected to the processing devices themselves and that a filter is to be arranged in the exhaust air line before the exhaust air so that the exhaust air is filtered before it is returned to the supply air.

The cited prior art reference does not provide any motivation for guiding supply air directly to the individual processing devices and for removing the exhaust air directly from the processing devices. The prior art only discloses to filter the supply air that is guided into a particular section of a clean room. Prior art references must themselves provide a

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suggestion or motivation to a person skilled in the art for modifying a device or for combining features. Separating a clean room of conventional configuration and providing a special filter arrangement for the supply air to one of the separate compartments cannot suggest or teach that the processing devices and the work room each have a supply line, that the processing device itself has an exhaust air line, apart from the work room having a return line, with a filter for filtering the exhaust air of the processing device before returning it into the supply air.

This cited prior art reference does not address the problem of cleaning risk-laden exhaust flow of a processing device in an inexpensive way and of returning cleaned exhaust air of the processing device into the supply air. As disclosed in the instant specification (paragraph 0009), a large portion of the exhaust air of the **processing device 2** can be reused by being filtered before it is added again to the air supply. This large quantity of exhaust air produced by the processing devices must therefore not be expelled and replaced with fresh air. In this way, the amount of exhaust air completely exhausted from the device and of fresh air that needs to be newly supplied can be reduced significantly. This leads to significant cost savings in comparison to standard practice in the industry (for example, semiconductor processing), as discussed in paragraphs 0004 of the instant specification.

The method steps of claim 21 of supplying supply air as a supply air flow to at least one work room and at least one processing device; cleaning a pollutant-laden exhaust air stream exiting the at least one processing device to remove high-risk pollutants; and returning the exhaust air stream after cleaning into the supply air flow, are also not obvious in view of the prior art reference. The prior art *Suwa* does not show that the supply air is supplied to the work room and to the processing device arranged in the work room and that the exhaust air of the processing device is filtered by a filter arranged in an exhaust air line connected to the least one processing device before being returned into the supply air.

Claims 5 and 6 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Suwa* (US 6,033,301) and further in view of *Hasegawa et al.* (US 5,828,572).

Hasegawa has been cited to show a sensor arrangement. However, this secondary reference cannot provide any teaching as regards the direct connection of the air supply

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lines and exhaust air lines to a processing device within a work room that is also provided with air supply lines and with a return line, wherein the exhaust air of the processing device is filtered before it is returned to the supply air.

It is therefore believed that claim 20 and claim 21 together with their dependent claims are allowable.

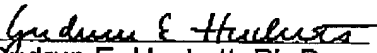
CONCLUSION

In view of the foregoing, it is submitted that this application is now in condition for allowance and such allowance is respectfully solicited.

Should the Examiner have any further objections or suggestions, the undersigned would appreciate a phone call or e-mail from the examiner to discuss appropriate amendments to place the application into condition for allowance.

Authorization is herewith given to charge any fees or any shortages in any fees required during prosecution of this application and not paid by other means to Patent and Trademark Office deposit account 50-1199.

Respectfully submitted on April 1, 2004,


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